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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,885	07/08/2003	Baofu Duan	063170.7183	9839
5073	7590	04/18/2007		
BAKER BOTTS L.L.P. 2001 ROSS AVENUE SUITE 600 DALLAS, TX 75201-2980			EXAMINER MARIAM, DANIEL G	
			ART UNIT	PAPER NUMBER
			2624	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/18/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 04/18/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/615,885	<b>Applicant(s)</b> DUAN ET AL.	
	<b>Examiner</b> DANIEL G. MARIAM	<b>Art Unit</b> 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 January 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Amendment***

1. In response to the Office Action mailed on October 30, 2006 applicants have submitted an amendment filed on January 30, 2007; amending claims 1,9-10, 12-16, 22- 23 and 25-28; and arguing to traverse the rejection of claims 1-28.

***Response to Arguments***

2. While Applicants' amendment to independent claims 1 and 16 cures the 35 U.S.C. 112, second paragraph rejection, the amendment to claims 12 and 25 remains unclear.

3. Applicants' arguments with respect to claims 15 and 28 filed on January 30, 2007 have been fully considered but they are not persuasive. Applicants argue starting on page 12 of the remarks, that 35 U.S.C. 101 rejection made against claims 15 and 28 is inappropriate, and thus the claims properly define a statutory subject matter. The Examiner disagrees. The claims remain the same, i.e., directed to signal claims, and do not meet the USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, which reads as follows: claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in Sec. 101.

... a signal does not fall within one of the four statutory classes of Sec. 101.

... signal claims are ineligible for patent protection because they do not fall within any of the four statutory classes of Sec. 101. Therefore, claims 15 and 28 remain rejected under 35 U.S.C. 101

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because the claimed invention is directed to non-statutory subject matter as stated in the last Office Action.

4. Applicant's arguments with respect to the art rejections of claims 1-11, 13-24, and 26-28 have been considered but are moot in view of the new ground(s) of rejection which will be discussed in the rejections below.

### ***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in Sec. 101.

... a signal does not fall within one of the four statutory classes of Sec. 101.

... signal claims are ineligible for patent protection because they do not fall within any of the four statutory classes of Sec. 101.

Claims 15 and 28 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claims 15 and 28 define a data signal with descriptive material. While "functional descriptive material" may be claimed as a statutory product (i.e., a "manufacture") when embodied on a tangible computer readable medium, a signal embodying that same functional descriptive material is neither a process nor a product (i.e., a tangible "thing") and therefore does not fall within one of the four statutory classes of §

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101. Rather, "signal" is a form of energy, in the absence of any physical structure or tangible material.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 12 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what the claimed limitation "R-squared value" is without having some functional dependency on a mathematically defined subject matter. Please clarify.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-2, 4-18 and 20-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Obradovic, et al (6,865,582).

With regard to claim 13, Obradovic, et al discloses a computer system (See Figs. 1 and 3), comprising: a processor (See for example, item 21, in Fig. 1); a program storage device readable by the computer system, tangibly embodying a program of instructions executable by the processor (See for example, item 22, 39, 29 and/or 31, in Fig. 1) to: partition, i.e., split and/or

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partition, a data space associated with a data set into a hierarchy (which corresponds to quad or regression trees) of pluralities of local regions, i.e., subregions, subsets, etc (col. 7, lines 42-52; col. 11, lines 1-36. Applicants' attention is also invited at col. 12, line 53 – col. 13, line 17); evaluate a relationship measure, i.e., preprocessing, branch and bound, similarity, distance, etc, for each local region using a metric based on similarity between input features and a selected output, and identify one or more relevant features, by using the relationship measure for each local region (See for example, col. 10, lines 114-36; and col. 11, lines 1-46).

With regard to claim 1, claim 13 encompasses the limitation of this claim, and is rejected the same as claim 13. Thus, argument analogous to that presented above for claim 13 is applicable to claim 1.

With regard to claim 2, the method of claim 1 further comprising: determining a feature relevancy of a selected feature by performing a weighted sum of the relationship measures for the selected feature over the plurality of local regions (See for example, col. 12, lines 37-52; and col. 15, lines 58-65).

With regard to claim 4, the method of claim 1, wherein the partitioning of the data space into the hierarchy of pluralities of local regions is performed by hierarchical clustering of the data set in a plurality of levels (See for example, col. 11, lines 1-16).

With regard to claims 5-6, claim 1 encompasses the limitations of these claims, and are rejected the same as claim 1, and thus the arguments set forth above for claim 1 (or 13) are not repeated herein, but are incorporated by reference.

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With regard to claims 7-8, wherein the subsets of relevant features for respective local regions are non- identical; wherein the local regions are non-overlapping, i.e., homogenous, and wherein the metric is linear (See for example, col. 10, lines 13-44; and col. 11, lines 1-46).

With regard to claim 9, the method of claim 1, wherein the metric is linear (See for example, col. 10, lines 25-28).

With regard to claim 10, the method of claim 1, wherein the metric includes a projection or distance (See for example, col. 10, lines 25-36).

With regard to claim 11, the method of claim 1, wherein the relationship measure includes a correlation (See for example, col. 9, lines 23-47).

With regard to claim 12, as best understood, the method of claim 1, wherein the relationship measure includes an R-squared value (See for example, col. 10, lines 25-28; and col. 15, lines 43-47).

Claim 14 is rejected the same as claim 13. Thus, argument analogous to that presented above for claim 13 is applicable to claim 14.

Claim 15 is rejected the same as claim 13. Thus, argument analogous to that presented above for claim 13 is applicable to claim 15.

Claim 16 is rejected the same as claim 2. Thus, argument analogous to that presented above for claim 2 is applicable to claim 16.

Claims 17 and 18 are rejected the same as claims 4 and 5 respectively. Thus, arguments analogous to those presented above for claims 4 and 5 are respectively applicable to claims 17 and 18.

With regard to claim 20, ranking the input features according to the corresponding feature relevancies of the input features (See for example, col.12, lines 3-46).

Claims 21, 22, 23, 24, and 25 are rejected the same as claims 8, 9, 10, 11, and 12 respectively. Thus, arguments analogous to those presented above for claims 8, 9, 10, 11, and 12 are respectively applicable to claims 21, 22, 23, 24, and 25.

Claim 26 is rejected the same as claim 13. Thus argument similar to that presented above for claim 13 is applicable to claim 26. Claim 26 distinguishes from claim 13 only in that it recites the limitation determining a relevancy of a selected feature by performing a *weighted sum* (emphasis added) of the relationship measures for the feature over the plurality of local regions at appropriate levels, which is also taught by Obradovic, et al (See for example, col. col. 12, lines 37-52; and col. 15, lines 58-65).

Claim 27 rejected the same as claim 26. Thus, argument analogous to that presented above for claim 26 is applicable to claim 27.

Claim 28 rejected the same as claim 26. Thus, argument analogous to that presented above for claim 26 is applicable to claim 28.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



10. Claims 3 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Obradovic, et al (6,865,582) in view of Hwang, et al (Hierarchical Discriminant Regression).

With regard to claim 3, Obradovic, et al (hereinafter "Obradovic") discloses all of the claimed subject matter as already addressed above in paragraph 8, and incorporated herein by reference. Obradovic does not expressly call for wherein weights for the weighted sum are based on sizes of the respective local regions. However, Hwang, et al (See section 2.2, pp. 1280-1282, particularly page 1282, left column) teaches this feature. Therefore, it would have been obvious to one having ordinary skill in the art to incorporate the teaching as taught by Hwang, et al into the system of Obradovic if for no other reason to find useful features or relation between features based on size information.

Claim 19 is rejected the same as claim 3. Thus, argument analogous to that presented above for claim 3 is applicable to claim 19.

### *Conclusion*

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,


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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL G. MARIAM whose telephone number is 571-272-7394. The examiner can normally be reached on M-F (7:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MATTHEW BELLA can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
DANIEL G MARIAM  
Primary Examiner  
Art Unit 2624

April 9, 2007